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(54) Combined crib-and baby walker

(57) A combined crib-and-baby walker is constituted by an elongated crib body 3 with upright front and rear frames 31, two parallel side frames 32 that interconnect the upright front and rear upright frames 31, a horizontally extending base plate 33 attached detachably to the upright front and rear frames 31, and a holding member 46 disposed between the parallel side frames 32 above the base plate 33. The holding member 46 is movable between the front and rear frames 31 and is further provided with a seat unit 47 at its center to accommodate a baby. A height adjustable mechanism is provided to alter the height between the holding member 46 and the base plate 33.

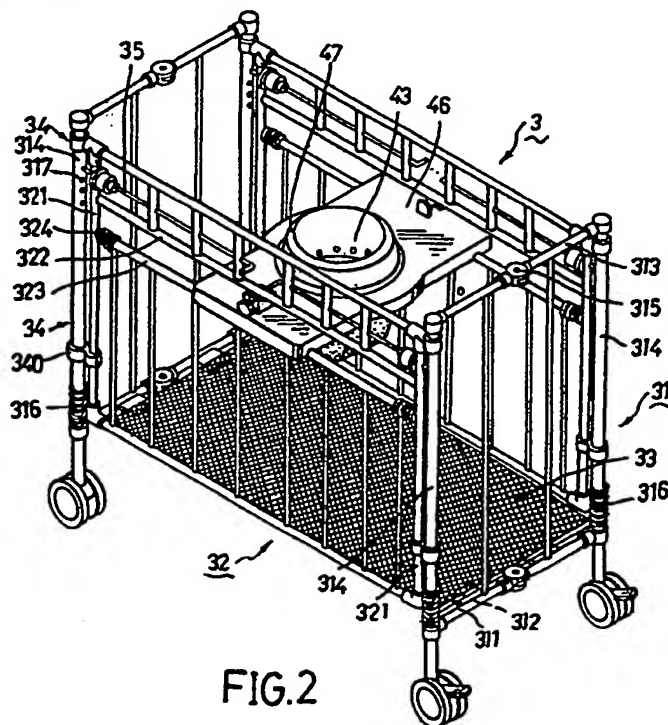


FIG.2

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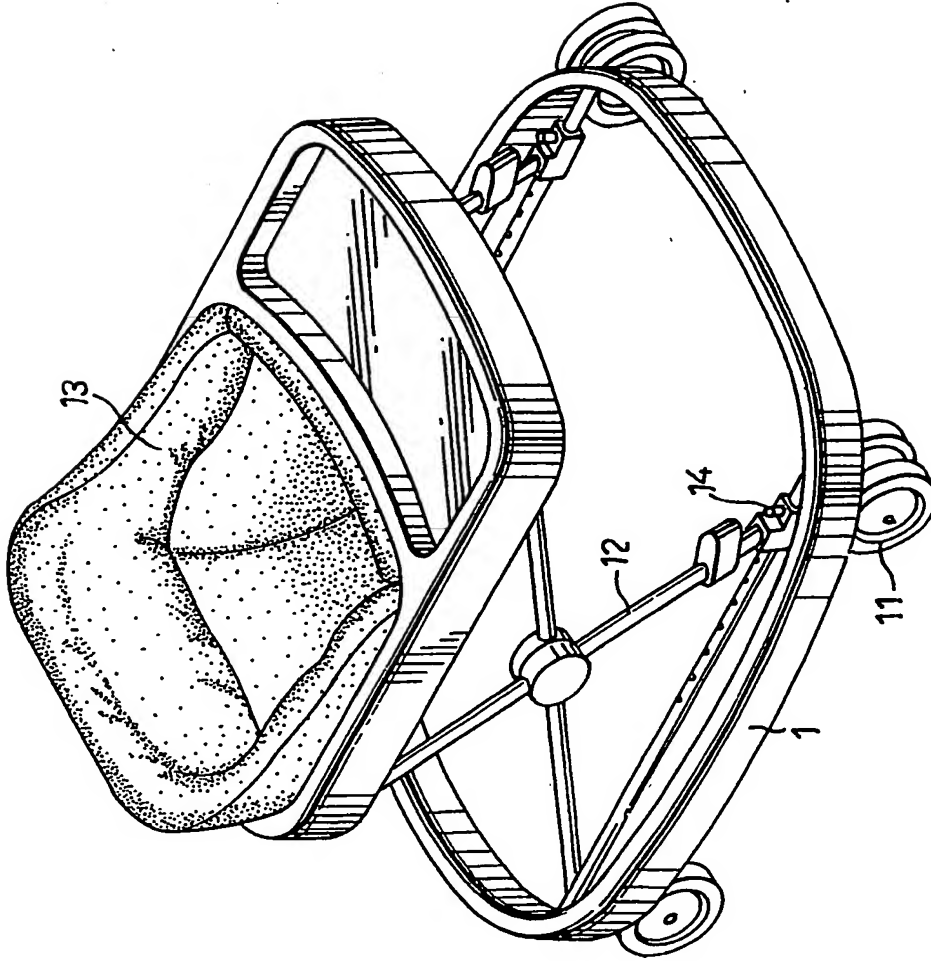


FIG. 1 PRIOR ART

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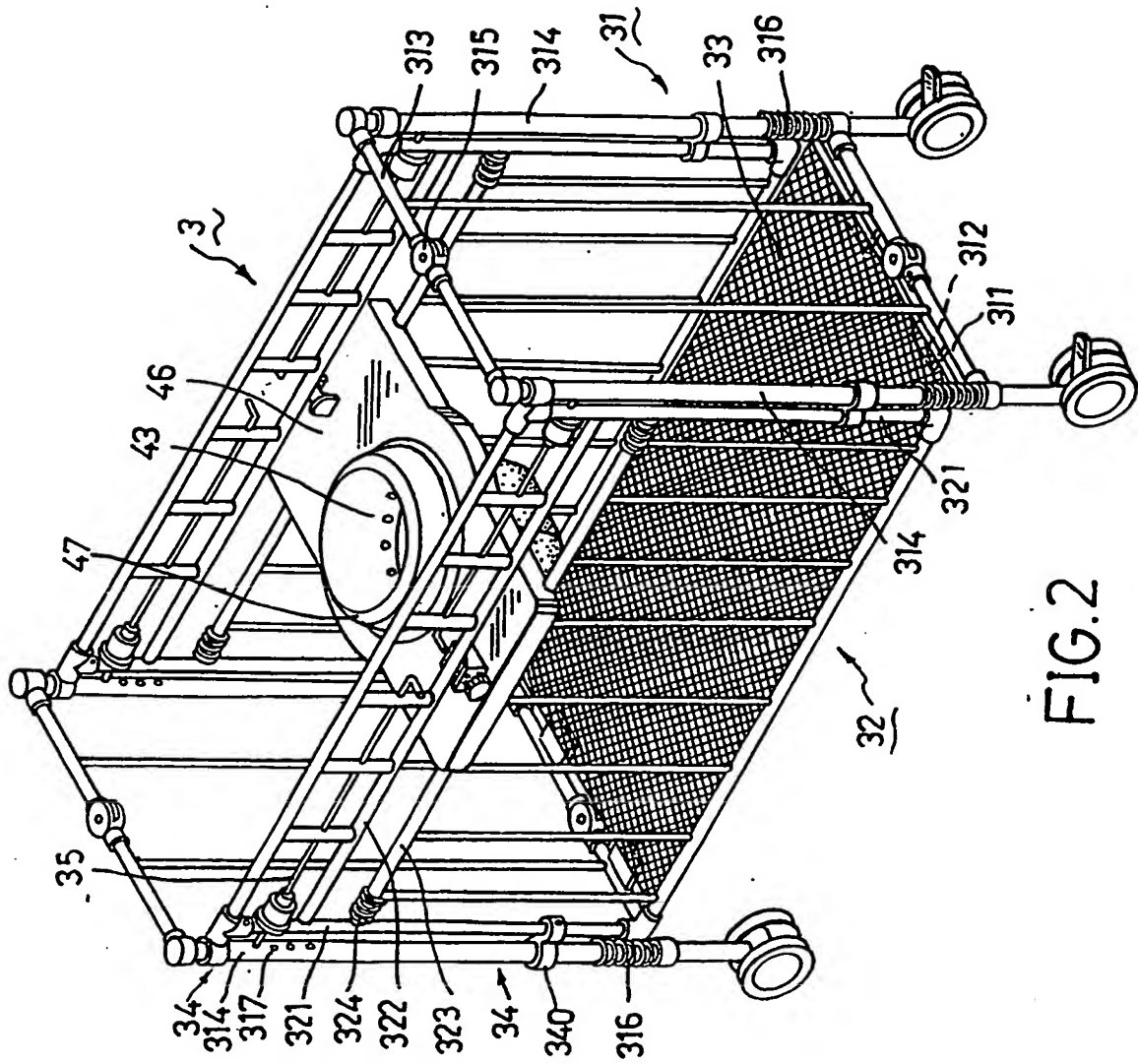


FIG.2

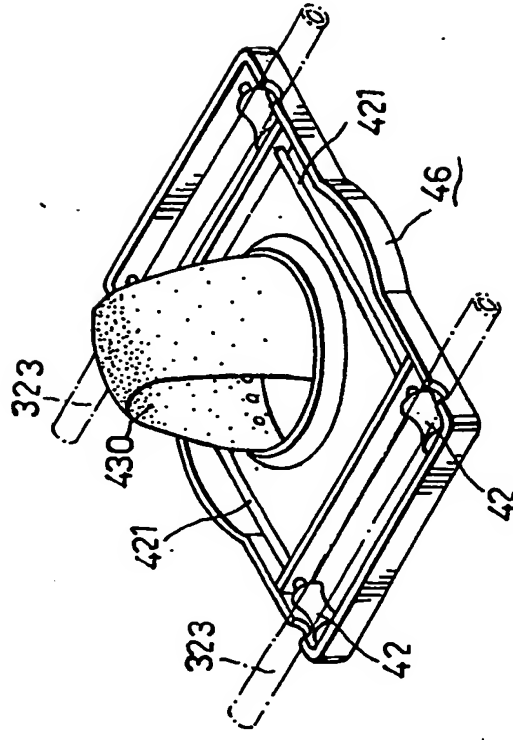


FIG. 4

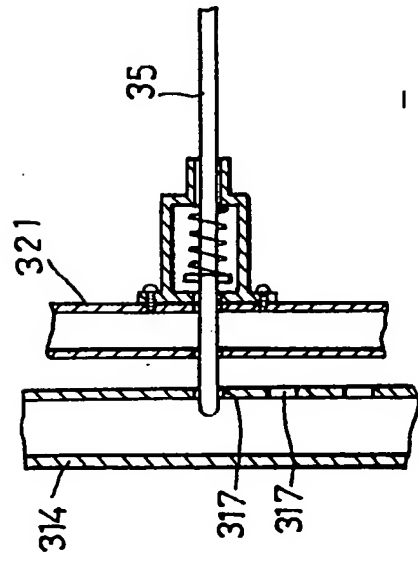


FIG. 3

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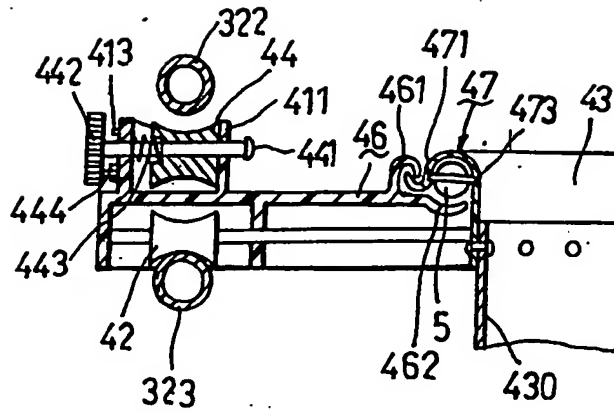


FIG. 6

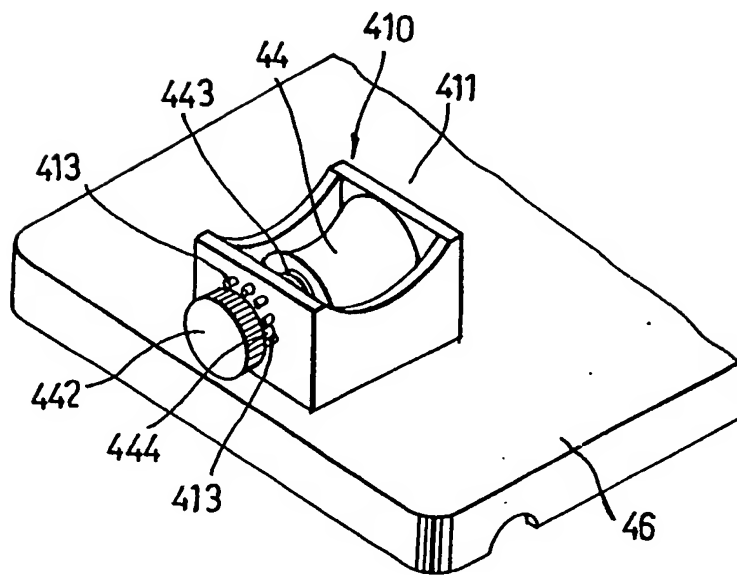


FIG. 5

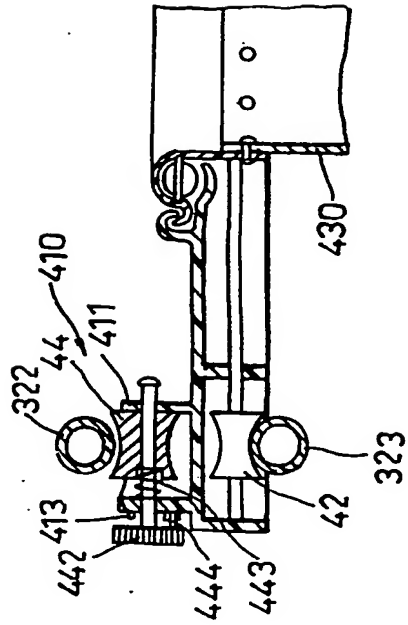


FIG. 7

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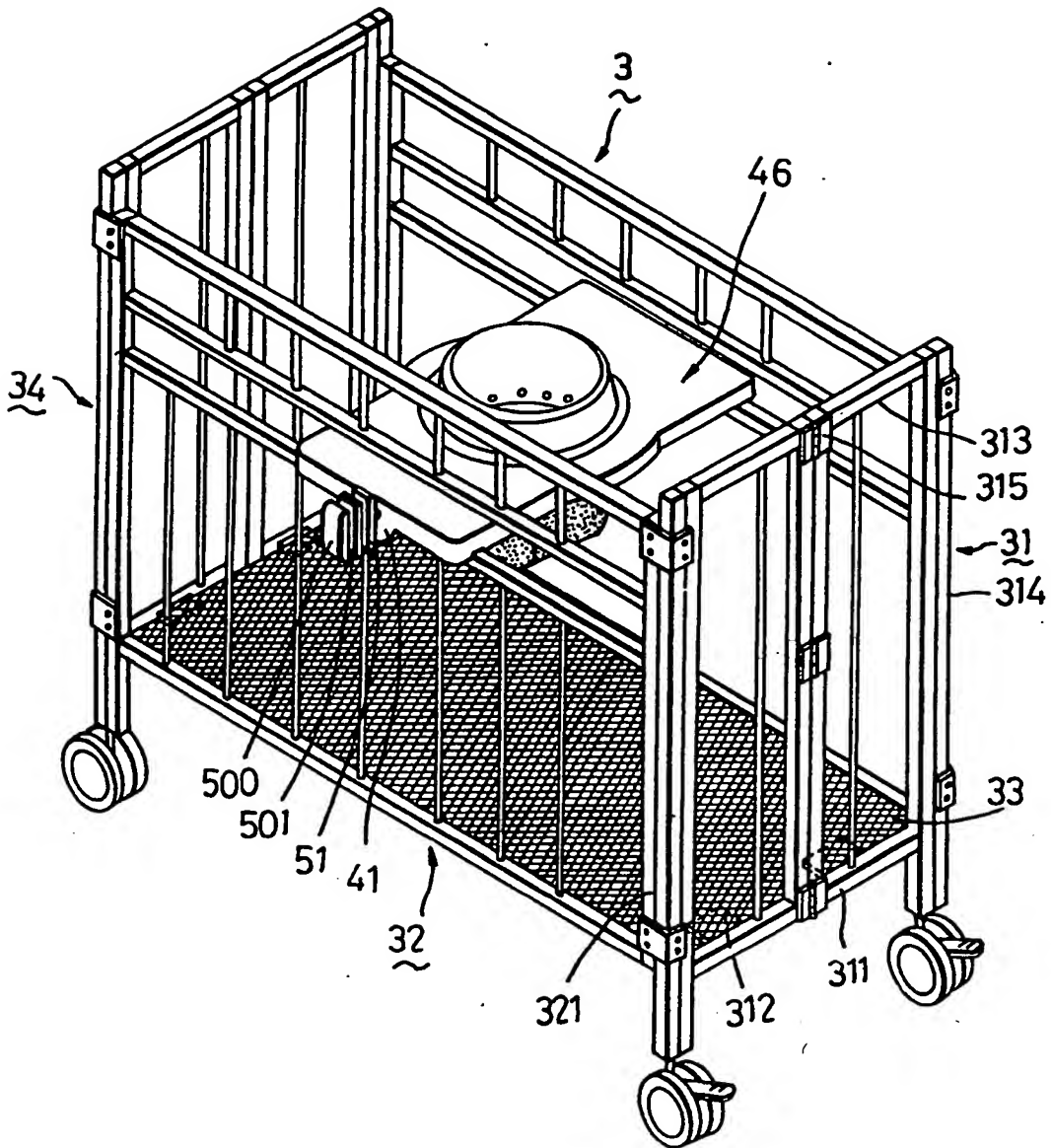


FIG. 8

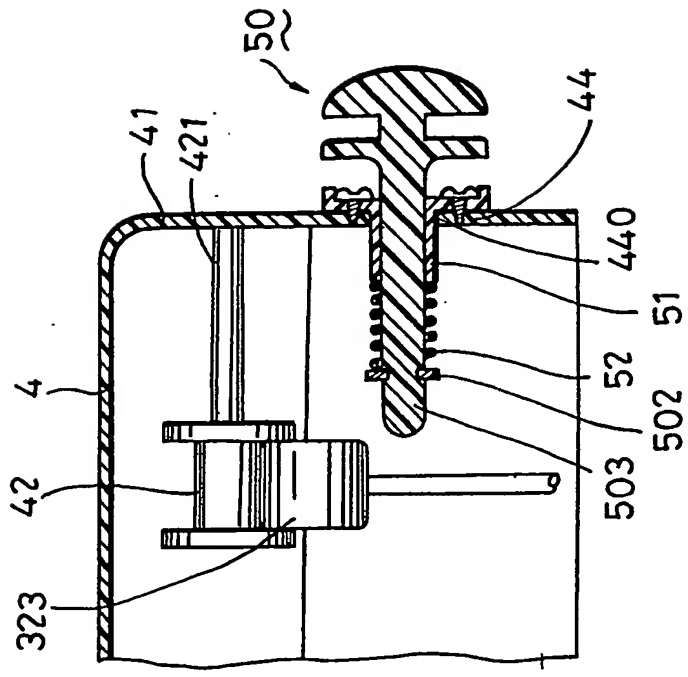


FIG. 9

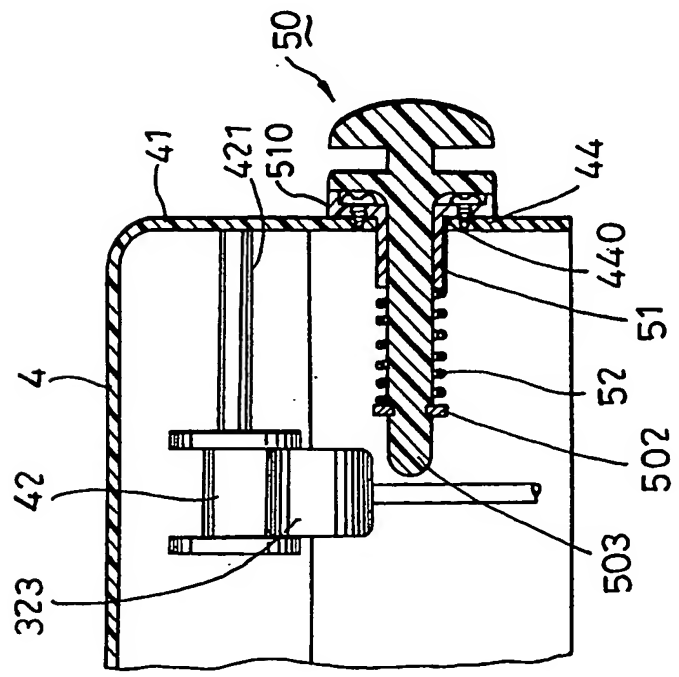


FIG. 10

COMBINED CRIB-AND-BABY WALKER

The invention relates to a baby walker, more particularly to a combined crib-and-baby walker.

Figure 1 shows a conventional baby walker by the use of which a baby learns to walk. The conventional baby walker includes a substantially circular base frame 1 with roller means 11 for moving the base frame 1 around, two sets of support frames 12 mounted securely on the base frame 1, a seat 13 mounted at the top of the support frames 12 for seating a baby therein, and a height adjustable mechanism 14 for altering the height of the seat 13 relative to the ground. The conventional baby walker is, therefore, adapted to be used by babies of differing heights.

Some of the drawbacks that result with the use of the conventional baby walker are as follows:

(I) Since no means is provided to restrict the moving range of the baby walker, the conventional baby walker may be moved by the legs of the seated baby to a dangerous place, such as a stairway, thereby leading to a fall and causing injuries to the baby.

(II) A baby-sitter should attend constantly to the conventional baby walker.

(III) The conventional baby walker cannot be converted into a crib when desired.

(IV) The conventional baby walker occupies a considerable amount of space because it cannot be

folded.

Therefore, the main objective of the present invention is to provide a combined crib-and-baby walker which can eliminate the above-mentioned drawbacks.

5 Accordingly, the combined crib-and-baby walker of the present invention includes an elongated crib body which has front and rear upright frames, two side frames that interconnect the front and rear upright frames, and a horizontally extending base plate
10 attached detachably to the front and rear upright frames. A holding member is disposed slidably between the side frames and extends parallel to the base plate. The holding member is provided with a circular hole and a seat unit disposed rotatably therein.

15 In order to suit babies of different heights, the crib body is provided with a height adjustable mechanism which permits alteration of a height between the holding member and the base plate of the crib body. The holding member can be disassembled from the crib
20 body so that the latter can be converted into a crib when desired. When the baby is placed in the seat unit of the holding member, the baby can turn relative to the holding member so that he can walk to and fro within the elongated crib body. His walking movement
25 is confined by the front and rear upright frames and two side frames of the crib body. Thus, the baby is prevented from falling while learning to walk. In

addition, a baby-sitter is not needed to look after the baby.

5 The combined crib-and-baby walker can be disassembled so that it requires a relatively small amount of space to store the same. Thus, the combined crib-and-baby walker is more convenient to use compared to the conventional baby walker.

10 Other features and advantages of the present invention will become more apparent in the following detailed description of the preferred embodiment with reference to the accompanying drawings, in which:

Figure 1 shows a conventional baby walker;

Figure 2 shows a combined crib-and-baby walker of the present invention;

15 Figure 3 illustrates a cross sectional view of a height adjustable mechanism employed in the combined crib-and-baby walker shown in Fig. 2;

Figure 4 shows a holding member employed in the combined crib-and-baby walker shown in Fig. 2;

20 Figure 5 illustrates an engaging unit mounted on the holding member shown in Figure 4;

Figure 6 shows a cross sectional view of the holding member of Figure 4 and the engaging unit mounted thereon, illustrating the configuration which permits disengagement of the holding member from the crib body of the combined crib-and-baby walker of the present invention;

25

Figure 7 shows a cross sectional view of the holding member and the engaging unit, illustrating the configuration where the holding member cannot disengage from the crib body of the combined crib-and-baby walker of the present invention;

Figure 8 shows another combined crib-and-baby walker of the present invention;

Figure 9 shows a cross sectional view of the holding member and the engaging unit, illustrating the configuration where the holding member cannot disengage from the crib body of the combined crib-and-baby walker shown in Figure 8; and

Fig. 10 shows a cross sectional view of the holding member and the engaging unit, illustrating the configuration which permits disengagement of the holding member from the crib body of the combined crib-and-baby walker shown in Figure 8.

Referring to Figure 2, a combined crib-and-baby walker of the present invention is shown to comprise an elongated crib body 3 which has front and rear upright frames 31, two side frames 32 interconnected detachably to the front and rear upright frames 31, and a base plate 33 mounted detachably to the front and rear upright frames 31. The base plate 33 extends parallel to the ground.

Each of the front and rear upright frames 31 is constituted by two cylindrical upright supports 314 and

upper and lower transverse rods 313, 311 which are connected securely to the two cylindrical upright supports 314. Each of the upper and lower transverse rods 313, 311 is composed of two sections with a hinge member 315 therebetween such that the upright frames 31 can be folded when detached from the side frames 32. Each of the lower transverse rods 311 has two spaced positioning studs 312 that extend inwardly therefrom so that the base plate 33 can be disposed detachably on the spaced positioning studs 312. Each of the cylindrical upright supports 314 is provided with a cushioning unit 316 thereon, the purpose of which will be described in the following paragraphs.

Each of the side frames 32 includes front and rear vertical posts 321, each of which is provided with two connectors 34 that are mounted securely at two different positions above a respective one of the cushioning units 316. The connectors 34 are used to interconnect the side frames 32 and the front and rear upright frames 31. Each of the connectors 34 has a tubular member 340 sleeved around a respective one of the cylindrical upright supports 314 and above a respective one of the cushioning units 316. The side frame 32 further includes a horizontally extending lower rod 323 and an upper rod 322 that is spaced above and that extends parallel to the lower rod 323. A holding member 46 is provided between the upper and

lower rods 322, 323. In this embodiment, the holding member 46 is in the form of a plate.

Referring to Figure 4, the holding member 46 has a lower face provided with two parallel shafts 421 which extend perpendicular to the side frames 32 and on which two sets of rollers 42 are mounted. Every set of rollers 42 is trained slidingly on a respective one of the lower rods 323 of the side frame 32 such that the holding member 46 can slide along the lower rods 323 reciprocatingly between the front and rear upright frames 31. Two spring members 324 are sleeved around a respective one of the lower rods 323 of each of the side frames 32 and are connected securely to the front and rear upright frames 31 respectively.

Referring to Figure 3, a height adjustable mechanism is constituted by a row of engaging holes 317 formed along a longitudinal length of the cylindrical upright supports 314 adjacent to a topmost portion thereof and a spring-loaded projection 35 mounted securely at an upper portion of the side frame 32. The spring-loaded projection 35 extends normally out of the side frame 32 to engage selectively one of the engaging holes 317. Thus, a vertical height of the holding member 46 relative to the base plate 33 can be adjusted.

Referring to Figure 6, the holding member 46 has a mounting hole 43 formed therethrough, a lower receiving

race 462, an upper receiving race 461 and a bearing means 5 between the upper and lower receiving races 461, 462. A seat unit 47 is provided in the mounting hole 43 of the holding member 46 in such a manner that
5 a curved flange 471 of the seat unit 47 is disposed above the lower race 462. Thus, the seat unit 47 can be rotated relative to the holding member 46. The seat unit 47 includes an annular holding ring 473 and a strap 430 with two end portions connected to the
10 holding ring 473 so as to suspend the same for receiving a baby therein.

Referring to Figures 5 and 6, a preventing unit 410 is mounted fixedly on an upper face of the holding member 46 between the upper and lower rods 323, 322 of
15 the side frames 32 to prevent the holding member 46 from disengaging the side frames 32. The preventing unit 410 includes a rectangular mounting support 411 and an eccentric wheel 44 with a shaft 441 journalled in the mounting support 411. The shaft 441 has two
20 ends extending out of the mounting support 411. A turning knob 442 is connected fixedly to one of the outwardly extending ends of the shaft 441. A compression spring 443 is sleeved around the shaft 441 inside the mounting frame 411 and compresses the
25 eccentric wheel 44 to abut a side wall of the mounting support 411. The mounting support 411 further has a circle of engaging tabs 413 formed perpendicularly on

its external face. The rotating knob 442 is provided with an engaging rod 444. When the engaging rod 444 of the rotating knob 442 is placed between and engages two adjacent engaging tabs 413 of the mounting support 411, the eccentric wheel 44 is disposed at a first stationary condition, as shown in Figure 7, wherein there is a slight clearance between the eccentric wheel 44 and the upper rod 322. Under this condition, the eccentric wheel 44 is prevented from disengaging the upper rod 322 of the side frames 32. The holding member 46 cannot be pulled out from between the upper and lower rods 322, 323 of the side frames 32. The eccentric wheel 44 can be pulled against biasing action of the compression spring 443 so as to as dispose the same at a second stationary condition.

The eccentric wheel 44 and the upper rod 322 of the side frame 32 cooperatively form a clearance which is wide enough to permit disengagement of the eccentric wheel 44 from the side frames 32. The holding member 46 can disengage the side frames 32 to convert the crib body 3 into a crib.

Since the tubular member 340 of the connector 34 fixed to the respective vertical post 321 of the side frame 32 is located above the cushioning unit 316 of the upright frame 31, the side frame 32 is prevented from falling to the ground in the event that the height adjustable mechanism of the crib body 3 is out of

order. Thus, the seated baby is prevented from being hurt due to the fall of the side frames 32.

The crib body 3 is further provided with roller means at the lowermost portions of the front and rear upright frames 31 for moving the crib body 3 around
5 and a brake means to stop the movement of the roller means.

Fig. 8 shows another embodiment of a combined crib- and-baby walker of the present invention. This
10 embodiment is similar to the previous embodiment, the main difference residing in the structure of the preventing unit. The holding member 46 of this embodiment has two opposed downwardly extending peripheral flanges 41, each of which is formed with an
15 opening 440. A positioning seat 51 has an outwardly extending positioning flange 510 (see Fig. 9) attached fixedly to the peripheral flange 41 of the holding member 46 such that a tubular portion of the positioning seat 51 extends interiorly of the holding
20 member 46. A locking bolt 50 is inserted into the positioning seat 51 and is retained therein by a tension spring 52 sleeved therearound. The tension spring 52 biases a C-shaped retainer 502 mounted adjacent to a free end 503 of the locking bolt 50 and
25 the positioning seat 51 so as to retain resiliently the free end 503 of the locking bolt 50 below the lower rod 323. The holding member 46 is thus prevented from

an upward lift in the event of removal from the crib body, as shown in Fig. 9. The locking bolt 50 can be pulled outwardly against biasing action of the tension spring 52, as shown in Fig. 10, when it is desired to
5 remove the holding member 46 from the crib body.

From the above description, it can be appreciated that, since the movement of the baby is confined within the crib body and since the crib body can be prevented from moving around by the brake means, the baby can
10 learn to walk safely in the crib body. When not in use, the crib body can be detached and folded so that the combined crib-and-baby walker can be conveniently stored.

CLAIM:

1. A combined crib-and-baby walker, comprising:

an elongated crib body including a front upright frame, a rear upright frame, two parallel side frames interconnecting said front and rear upright frames, and a horizontally extending base plate attached detachably to said front and rear upright frames; and

a holding member disposed detachably between said two parallel side frames above and parallel to said base plate, said holding member being movable slidingly between said front and rear upright frames and having a circular hole formed therethrough, a seat unit mounted in said circular hole and a bearing means disposed between said holding member and said seat unit to permit rotation of said seat unit relative to said holding member.

2. The combined crib-and-baby walker as defined in Claim 1, wherein said crib body further includes a height adjustable mechanism for moving said parallel side frames along said upright front and rear frames so as to alter a height between said holding member and said base plate.

3. The combined crib-and-baby walker as defined in Claim 1, wherein said seat unit includes an annular holding ring and a strap with two end portions connected to said holding ring so as to suspend said strap from said annular holding ring for receiving a

baby therein.

4. The combined crib-and-baby walker as defined in Claim 1, wherein each of said parallel side frames has a horizontally extending lower rod and an upper rod spaced above and parallel to said lower rod, said holding member being disposed between said lower and upper rods and having a bottom side provided with two sets of rollers, each set of which being trained slidably on a respective one of said lower rods, and an upper side opposite to said bottom side, said upper side of said holding member having a mounting support with an eccentric wheel journaled therein, and a rotating knob for rotating said eccentric wheel selectively between a first position, wherein said holding member is prevented from disengaging said upper and lower rods, and a second position, wherein said holding member is permitted to disengage from said upper and lower rods.

5. The combined crib-and-baby walker as defined in Claim 2, wherein said height adjustable mechanism is constituted by two rows of spaced engaging holes formed vertically in each of said upright front and rear frames, and two outwardly extending projections formed at two opposed ends of each of said parallel side frames for extending selectively into said engaging holes.

6. The combined crib-and-baby walker as defined in

Claim 4, wherein each of said side frames further has two spring members sleeved around a respective one of said lower rods, each of said spring members being disposed between said holding member and one of said upright front and rear frames.

7. The combined crib-and-baby walker as defined in Claim 6, wherein each of said spring member is attached securely to a respective one of said front and rear upright frames.

8. The combined crib-and-baby walker as defined in Claim 6, wherein each of said front and rear upright frames includes two spaced upright cylindrical supports, each of said cylindrical supports having a cushioning unit fixed thereto, each of said side frames further having front and rear posts, each of said posts being provided with two connectors fixed respectively and securely at two different positions, each of said connectors having a tubular member sleeved slidably around a respective one of said upright cylindrical supports of said front and rear upright frames and disposed above said cushioning unit.

9. The combined crib-and-baby walker as defined in Claim 1, wherein said crib body further includes roller means mounted at a lowermost portion of said front and rear upright frames for moving said crib body around.

10. The combined crib-and-baby walker substantially as described hereinbefore with reference to and as

illustrated in Figs. 2 to 7 of the accompanying drawings.



- 15 -

**The
Patent
Office**

Application No: GB 9504597.7
Claims searched: 1-10

Examiner: John Wilson
Date of search: 12 June 1995

**Patents Act 1977
Search Report under Section 17**

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.N): A4L[LABA LAAM LAAQ LAAS LAAT]; A6M[MEA]

Int Cl (Ed.6): A47D 7/00 9/00 11/00 13/04 13/06

Other: Online:- WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
Y	GB791475	Disher - note the figs.	1,3 at least
X,Y	EP0549544A1	Brevi - whole document	1,3 at least
Y	US4985948	Mariol - note the figs.	1,3 at least

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